



The

GARzette



The Official Newsletter of the Gwinnett Amateur Radio Society

December 2022 <http://www.gars.org/> Volume 32, Issue 12

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www.GARS.org



**GARS January Exhibition of the
Technical aspects of Amateur Radio
Held at the Gwinnett County
Fairgrounds**

**Don't forget to support our
advertisers at the back of the
GARzette.**

**GARS next meeting:
Tuesday January 10, 2022 at 7:00 PM**



President's Message

From the President...



The year is just about a wrap, and no more GARS Club meetings or Workshops until January.

If you have not heard, the Stone Mountain Ham Fest was a huge success and the weather could have not been any nicer. A big thanks to both the Alford Memorial Radio Club, the Gwinnett Amateur Radio Society Club and Gwinnett County ARES Club volunteers

whom without your support, this could not have been pulled off any better. Another major thanks to the Alford Memorial Radio Club for this continued time-honored Ham Fest Event.

If you have not visited our groups.io **Ham Fest Photo Album**, be sure to check it out in the photos section at <https://groups.io/g/GARS/album?id=281485> or click here> [2022 Stone Mountain Ham Fest Photo Album](#)

If you could not make the GARS Holiday Party, you missed a really nice time with good friends and good times.

Ralph Pickwick, KJ4CNC won the **GARS Ham of the Year Award**. It was my pleasure to award this and present to the attendees the merits that made Ralph the obvious choice. **See elsewhere in this newsletter for a more detailed listing of all the wonderful things that Ralph gives freely and selflessly of himself to the GARS Club.**



I also explained the Ham of the Year selection process. This has not been conveyed in several years, so it was now time to let everyone know more of the selection process for this award. **See elsewhere in this newsletter for more details on this process.**

The party itself was fantastic! Best one I have seen in years. There must have been 50+ in attendance. I want to thank so

many folks for pitching (as usual) to help set up, conduct the activities and help tear down and clean up. Thanks to **Sandy Jackson, KJ4DRO** for helping with the door prize tickets, helping draw for the prizes, decorating the beautiful table we all sat at and taking some wonderful pictures. See them at: <https://groups.io/g/GARS/album?id=282146>, or click here> [Party Pictures](#). There's also another person I would like to call out for the fantastic setup, acquiring and presentation of the food. Thank you, **Geri Foust, K4GMF** for organizing one heck of a GARS Holiday Party. And thanks to all the food crew as well. I cannot wait until next year.

TechFest 2023 is our next major event. And that will be held at the Gwinnett County Fairgrounds on January 14, 2023. Please plan to attend this totally free event. Lunch will be served and a variety of good chili is expected. Speaking of Chili, we will be bringing back the chili cook off. Please consider bringing a pot of your favorite chili recipe and enter it in the running for an award.

There will be plenty of room for Exhibitors. Dstar, DMR, Fox Hunting, Geocaching, are but a few subjects of technology you will see on display. All free of charge. If you have a talent, or something you would be willing to share with the community, or know someone that could, please contact us through the TechFest website at: <http://www.techfest.info/email-exhibitors/> or click here> [Techfest Info](#) and let us know how many tables you would need and any power requirements. Again, all free.

Please come and partake in this event and help us celebrate the **25th Anniversary of TechFest**.

Have a Merry Christmas and a Happy New Year!

73.

Joe Biddle, AD4PZ

Club President



GARS Repeaters and Other Communications

<u>2 Meter Repeaters</u> 147.075(+) MHz Tone 82.5 147.255(+) MHz Tone 107.2 <u>1.25 Meter Repeater</u> 224.580(-) MHz Tone 100.0, 1.6 MHz Offset <u>70 Cm Repeaters</u> 444.525(+) MHz Tone 82.5 442.100(+) MHz Tone 100 442.325(+) MHz Tone 100	<u>6 Meter Repeater</u> 53.110 (-1 MHz) No Tone (Offline for Maintenance) Other Resources: <u>APRS</u> 144.390 -- 1200 Baud W4GR <u>D-STAR</u> WD4STR 145.060 + (1.4 MHz) 440.550 + (5 MHz)	6M Currently down 147.075 Operational in Snellville 147.255 Operational in Snellville 224.580 Operational in Grayson 442.100 Operational at Goshen Springs 442.325 Operational in Buford 444.525 Operational in Snellville Link remote receivers being added
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Notable Web Links

Ham Radio Glossary: <https://noji.com/hamradio/glossary.php> a very comprehensive listing provided by Noji Ratzlaff KNØJL. On his site there is also a lot of information about getting started in ham radio.

Need Help – Let GARS Elmers answer your questions

Send an email to elmers@gars.org with the subject listing the area (like Antennas, Repeaters, Digital, DMR etc.) of your query to get to GARS Elmer volunteers.

The *GARzette* is the official monthly newsletter of the Gwinnett Amateur Radio Society, serving its members and other persons interested in the advancement of the Amateur Radio art.

Original articles, art, and photos are invited and encouraged. Previously copyrighted submissions cannot be accepted for reprinting unless permission from the appropriate publisher is provided in writing along with the information being submitted. If reprints are from publications allowing their unrestricted use, please include a copy of the printed permission contained in the publication.

If possible, bring your articles to the monthly meeting in Microsoft Word or rich text (.rtf) or text or HTML format or by e-mail to editor@gars.org. Artwork can be accepted in most any graphics format and can be submitted via e-mail to the same address. Alternate means of submittal can be arranged when necessary.

In keeping with the Amateur Radio spirit, permission is hereby granted for the reproduction of The *GARzette* articles by other Amateur Radio club newsletters provided that proper credit is given to the individual author and *The GARzette*.

The GARzette is published each month with the assistance of Karen KI4HPP and Kyle W4KDA who print copies for distribution at meetings, etc. and Dave Bruse, W4DTR, who distributes the newsletter electronically.

Deadline for submissions is the 28th of each month for inclusion in the following month's issue.

For additional information view our Website at: <http://www.gars.org> [PS— Articles to publish in the *GARzette*, either written by GARS members or published elsewhere, are always welcome. —Ed.]

Newsletter Email: editor@gars.org Editor: Bob Hoffmann, K4CQO

GARS HELP WANTED

Multimedia Chair - We are looking for a volunteer who can video record our meeting presentations then edit and post these videos to the GARS YouTube channel. Kyle Albritton, W4KDA, will be available to train this volunteer. If you could perform this function, please contact any officer via the Officers and committee chairmen page to inquire about this position. <https://gars.org/contact/>

GARS Meetings & Workshops

GARS Meetings and Workshops are held in-person at the EAA 690 Hangar, 690 Airport Rd, Lawrenceville, GA 30046.

Meetings and Workshops are OPEN to all, feel free to share your invite with others.

Zoom login info will be posted to <http://www.gars.org> prior to the meeting.

When events are available on Zoom

- Workshops and Meetings will be **recorded**. By participating you consent to being **recorded**.
- Please change your display name to Your **FirstName Call Sign**, e.g. **Hiram W1AW**
- [How to change Your Display Name in Zoom](#)
- Please stay muted until ready to speak. Your space bar works like a PTT for un-muting
- To be fair to everyone, there will be a three minute limit for each person during Q & A
- You may ask questions in chat; **please stay on topic while using chat**.

GARS Meetings Schedule (second Tuesday @ 7:00 PM): (these are the presentations)

- January 10, 2023 - Ham Bands Below 160m - Kevin Scott K4GTR
- February 14, 2023 - **TBD**
- March 14, 2023 – Ribbit, a new digital texting mode for VHF/UHF – Pierre Deliou W4CKX
- April 11, 2023 - Pi-Star DMR Hot Spot - Mark Prichard KN2TOD

Workshop Schedule (third Tuesday @ 7:00 PM): (these are the Hand-on Workshops)

- January 17, 2023 - Ham Bands Below 160m - Kevin Scott K4GTR
- February 21, 2023 - **TBD**
- March 21, 2023 – Ribbit, a new digital texting mode for VHF/UHF – Pierre Deliou W4CKX
- April 18, 2023 - Pi-Star DMR Hot Spot - Mark Prichard KN2TOD

GARS December **Meeting** and **Workshop** were replaced with the **Annual Christmas Party** that was held at the EAA 690 Hangar on December 3.



GARS Happenings

20 Years ago in the December 2002 GARzette:

- The First United Methodist Church became the GARS meeting place
- Richards Middle School and Sweetwater Middle School both have active GARS supported ham radio programs
- The GARzette celebrated Steve Back's (WB2OGY) son (getting his Eagle Scout Award)

You can always browse the GARzette archive at <http://www.gars.org/newsletters> and go directly to the 2002 GARzette by clicking on the image. 73, Bob, K4CQO, GARzette Editor



Health and Wellbeing – Sandy Jackson, KJ4DRO

Look for this resource on [Email](https://gars.org/contact/) (<https://gars.org/contact/>) and use it as a means to convey information about a GARS family member or Silent Key notification.

Net Managers Corner

Monday Night 2 Meter “Want, Swap, Sell, and Information Net”

GARS NEEDS MEMBERS TO SERVE AS NET CONTROL STATIONS!

GARS is a great Amateur Radio service club with the membership and awards to prove it. Our club is very busy and active, and we use the Monday night net to get timely information out to our members. Weekly participation is needed to make our net function well. There is only a small group of very dedicated people who make the net happen each week, and we need more members to volunteer to serve as Net Control Stations (NCS) on a rotating basis.

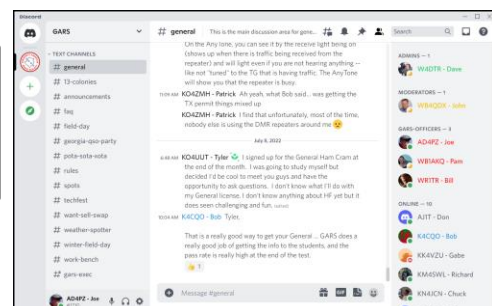
Out of almost 300 members, there are only seven operators who serve as the NCS for the GARS net every Monday night. In no particular order, they are:

Don – KW4AL	Ray – N4GYN	Bill – WG9NUW	David – KA4KKF
Glen – W3WWT	Russell – AB4QQ	Chuck – KK4TKJ	Charlie – WS4TOT

As GARS Net Manager (Chuck KK4TKJ), I would like to have more volunteers to fill NCS positions. I do plan and post the schedule months in advance. Any conditions will be accommodated that you as a rotating NCS need to place on the scheduling of your duties. If your plans change, I can make adjustments for the schedule to work, and I will make those changes happen as soon as I am notified of a problem. As Net Manager, I also send out reminders each week to let the NCS scheduled know he or she is NCS for the next Monday night net. In short, serving as a rotating NCS is a small duty but a great contribution to the club. The “Want, Swap, Sell Information Net” begins promptly at 19:30 every Monday night and runs about 30 minutes. As a scheduled NCS, you will request the assistance of a volunteer alternate NCS each time you have Net Control. Your simple duties will be to tune in to the GARS repeater, read the script, take a few notes and forward the information to me for record keeping.

Please lend a hand and contact (Chuck) via [Email](https://gars.org/contact/) (<https://gars.org/contact/>) to help support the effort that makes GARS the great club that it is. See you on the Nets!

Don't forget about our Discord utility for GARS announcements, news, activity spotting and more. See <http://www.gars.org> top of the home page. This is a sample of Discord. →



GARS Ham of The Year

Congratulations to **Ralph Pickwick, KJ4CNC** **for** **Gwinnett Amateur Radio Society Club** **Ham of the Year 2022**

This year we received more than double the nominees from GARS Members from last year. In the end, there was one clear winner. Ralph was unanimously voted this year's **GARS Ham of the Year**

Let us review some of the Merits that Ralph was nominated for.

Attended and helped out with numerous GARS events:

- TechFest
- Dacula Memorial Day Parade
- Field Days

GARS Fund Raisers:

- Dog Show
- Stone Mountain Hamfest

Other Education arenas:

- GARS HamCram Instructor (Spring Tech, Summer General and Fall Tech)
- Many years as the GARS Education Chairman
- Listed as an ARRL License Instructor

The Following Educational Merits Warrant Further Mentioning:

- **McConnell Middle School Radio Club, KD4TGR in Loganville, Georgia** where Ralph is their Outreach Coordinator and was **Awarded Student Teacher Status**.
- These merits include Ralph's work with **Mason Elementary School** in Duluth and **Archer High School** in Lawrenceville,
- Ralph's involvement with these schools and included activities along the lines of the operating and technical aspects of Amateur Radio
- Demonstrations Direction Finding through the occasional Fox Hunts
- ARISS coordination. The Amateur Radio International Space Station requires major coordination.
- Participation in the bi-annual **ARRL's School Club Roundup**.
- Ralph participates in **EAA690's Kids Summer camp**. This is where soldering, circuit construction and ham radio introduction is given on behalf of GARS.
- The **Atlanta Radio Club** solicited many Radio Clubs for nominations for an Award for **Atlanta Educator of the Year**. And that award was presented to our own Ralph this year.

Congratulations again to Ralph Pickwick, KJ4CNC for Gwinnett Amateur Radio Society Club Ham of the Year 2022

- Joe Biddle, AD4PZ



Selecting the GARS Ham of the Year – The Process

It's been quite a few years, since this process has been explained, so let me convey to you how we go about choosing the GARS Ham of the Year.

We've had quite a few recipients of this award over the past 29 (documented) years. I'm proud to say I was a GARS member when we awarded the first Ham of the Year in 1994 to Duane Hanson, KD4KCR. And over the years, we've had many fine additions of Hams, both OM (Old Men) and YL's (Young Ladies). Heck the very next HOTY was given to Cheryl McClure, AE4HN and a few years later Susan Swiderski, AF4FO became part of that list. And so on.

We award this honor very carefully. We consider the contributions and willingness of the nominee to step up to take on **tasks that benefit our great club**. This includes considering the **general positive attitude** of the nominee towards our Club and the Amateur Radio Service.

Nominee Solicitation - First, we ask for nominations for HOTY from **Members** of the Gwinnett Amateur Radio Society Club. We ask this of the GARS Membership as these are the folks who will know best the merits of whom to nominate. The nominations will contain the Name of the GARS Member being nominated and include a list of merits to be considered for the nomination. These merits or attributes are things of time and effort the nominee has graciously given of themselves to the GARS Radio Club.

Information Collecting - This information is sent to the GARS President for collating and tabulating to make ready for voting. After the submission deadline, the elected officers will gather to review and make a decision for the HOTY award.

Data Presentation - In the past, the merits have been reviewed in numerous methods and ways. This may have come in the form of simply reviewing the emails and writing down all the merits on a big whiteboard, and then reviewing. But since I've been President, we have been meeting via our zoom platform, so I've presented the nominee merits by listing them on a spreadsheet.

Data Integrity - I take the nominations that come in from our collection platform, and put those merits on the spreadsheet, verbatim. Verbatim...that is very important! That is to say, I do not alter, spellcheck or embellish in any way on what is received. I present each merit on an individual line item to more easily convey visually. And of course, the Officers are free to add any additional merits they feel may have been omitted.

The Vote - After reviewing all the merits for each nominee, the President calls for a vote. Majority vote decides.

- Joe Biddle, AD4PZ

The Stone Mountain Hamfest

Pictures from Joe AD4PZ



VE Testing at the Stone Mountain Hamfest

GARS helped out at the Stone Mountain Hamfest. There were two excellent exam sessions.

Saturday Results:

- 9 new Technicians
- 4 Generals
- 3 Extras
- 11 failed
- 27 total

Sunday Results:

- 3 Generals
- 1 Extra
- 5 failed
- 9 total

High failure rates at a Hamfests are typical. Many applicants at a Hamfest will take the exam without studying, just because they are there. This year, exams were free which probably increased our failure rate just a little.

I want to thank the follow VE's who participated on Saturday and/or Sunday. We couldn't have done it without you!

- Frank, KV4SP (Session Manager both days)
- Bob, K4CQO
- Don, KK4NJM
- John, N4MPC
- Dave, W4DTR
- Chuck, KK4TKJ
- Nathan, W4GOP
- Jamie, KX4HA
- William, KO4BND
- Richard, KM4SWL
- Bill, WR1TR
- Lane, KB4KHQ
- Steve, WB2OGY
- Brian, KD4UYP

73 - Dave, W4DTR

GARS 2022 Field Day Contest – a HamLib Story

The GARS Field Day Contest - a HamLib Story!

I covered a Field Day event, and wanted to document the occasion for prosperity, but my recorder started skipping, leaving out some words. So, at the GARS Holiday Party, I asked the attendees to help fill in those omissions. I pretty sure we have this documented correctly now. [See the contributing words.](#)

GARS was getting ready for the annual ARRL Field Day Exercise/Contest. The contest site was busy with folks hauling in our LARGE equipment. We carefully set up the SANTA, and took special care in placing the

AIR PLANE, as it is necessary in assisting with power for all our equipment. The crew had already hung the BAD antennas, so we were now ready to start JUMP each one for functionality

Next, we fired up the FRENCH FRIES to test it as well, but we had forgotten to ground the HOT DOG. So, MARK BELL got an RF burn on his TONSILS after grabbing the microphone.

Our favorite EGG NOG was brewing and the SPAGETTI were laid out on the table. And of course, everything is healthy and has zero calories, including the PEPERMINT Krispy Kreme donuts.

It was now time to start making RECEIVER contacts, and for everyone to fill the air with HANGER. We had been EATING for several hours and the band conditions were FRIENDLY!

We were down to needing only two PEOPLE for a clean sweep, when GERI FOUST spilled her MAI TAI on the main charging circuit, tripping every breaker in the pavilion and surrounding BOTSWANA.

We called upon our electrical experts, as they were SPAMMED in the ARES trailer and still operating on 80 meters. They said they'd be over in 10 HOURS. They could still operate since they had strung up

911 'AAA' batteries together for power.

After the breakers were reset, we were back on the air, but still needing one multiplier, SHEEP. It was at that moment someone heard those needed RADIOS calling CQ on the 73-meter band. So, after a quick tune up, CHARLIE JACKSON started calling for the elusive stations. But they weren't hearing us.

Finally, the Band Captain noticed the MICROPHONE was pointing away from the DARK SIDE OF THE MOON, so they adjusted the antenna to the proper heading. These stations were QUICKLY contacted and logged immediately, with a mere 73 MILLI-SECONDS to spare. In the final tally, GARS took 690th place in the contest in our category of QRP.

With over 42 contacts, we managed a score of 99 points, thus winning the coveted ARRL LAMBORGHINI award.

Congratulations to GARS!

73,
Joe Biddle, AD4PZ



Final GARSresults:

8A

South Jersey Radio Assn.					
K2AA (+W2EA)					
	4,175	2	41	16,964	SNJ
Woodbridge Wireless ARC					
W4IY (+W4AD)					
	3,740	2	43	14,708	VA
Rappahannock Valley ARC					
K4TS (+KJ4MHD)					
	2,204	2	20	8,492	VA
Gwinnett ARS					
W4GR	1,740	2	85	7,282	GA
Mahoning Valley ARA					
W8QLY	762	2	25	4,306	OH
North Bay ARA					
K6LI	439	2	25	3,298	EB
London ARC					
VE3LON	535	2	40	3,282	ONS
Keuka Lake ARA					
N2AAR	398	2	14	2,662	WNY

Upcoming WinterHeat 2023

WINTERHEAT 2023



WINTERHEAT
 AMATEUR RADIO
 SIMPLEX EVENT

WINTERHEAT is a month-long amateur radio simplex event, January 2023. The goal and purpose is for amateur radio operators to make as many contacts as possible over a month long period of time using only designated simplex frequencies.

This is an event originally started in Illinois as a regional event, and has slowly been opened up to hams all over. So jump on the bandwagon for an opportunity to test your gear while trying to contact other hams via simplex mode. 1000 Hams made over 134,000 contacts in 2022.

In an effort to create an avenue for communication among hams here in Georgia during the event a Discord app has been employed. Join us at <https://discord.gg/v6X8ZTFd> Any Questions? Feel free to email n3ack@atlantaradioclub.org

- All participants must be registered with the automated logging system for contacts to be credited **www.hamactive.com** The website will be populated with more info as we get close to January All contacts must be made on the designated amateur radio frequencies.
- Contacts must be via FM voice and can be either analog or digital (DMR, Fusion, D-Star).
- All contacts must be made during the event period. (00:01 January 1, 2022 to 23:59 January 31, 2022) Stations may only make contact with each other once per day on each designated frequency.

SCORING:

When making a QSO, only one station will enter the information into the system. Usually, the station calling CQ would enter the initial QSO information. The other station will be responsible for confirming the QSO. Unconfirmed QSO will be credited with 1 contact point where a confirmed. QSO will be awarded a value of 10 contact points.

A QSO can be made with a station that has not signed up as a participant. However that QSO will only be awarded a single contact point. Should the non-participant sign up for the event after the QSO is made, the QSO made prior to their sign up will still be credited as a single contact point until the participant confirms the contact.

RECCOMENDED FREQUENCIES		
ANALOG		
2M	70CM	OTHER
147.570	446.700	52.540
147.525	446.400	223.400
		927.100
DIGITAL		
147.570 C4FM-V	446.700 C4FM-U	
147.570 DMR-V <small>TG:99 TS:1 CC:1</small>	446.700 DMR-U <small>TG:99 TS:1 CC:1</small>	
145.670 DSTAR-V	447.225 DSTAR-U	

Upcoming Georgia Statewide POTA

Mark the Date! On the weekend of **April 1-2, 2023**, there will be state-wide POTA activations of **all 50 Georgia State Parks!**

The idea is to enlist enough hams from all over to fan out across the state and activate 50 parks over the course of that one weekend.



We will have a website where details, signups, etc., will be posted. In the meantime, keep an eye on the event description and comments on the “Georgia Ham Radio Portable” Facebook page:

[Georgia State Parks on the Air.](https://www.georgiahamradio.org/pota)

The Vintage 811 and 811A Triode - Part 2

Vintage Amateur Radio

de Bill Shadid, W9MXQ

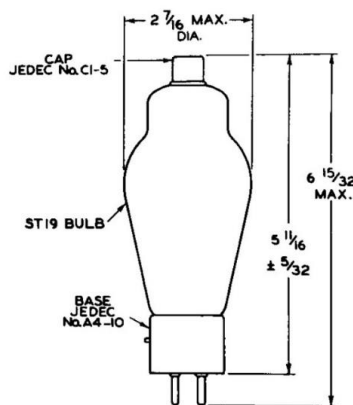


In the last installment in this series we covered modern amplifiers using the 811A Triode. That included such stellar products as the Ameritron AL-811 and AL 811H, the Ten-Tec Centaur, and the somewhat elusive (in North America) Linear AMP UK Ranger 811H. But, this tube extends back to products coming out of military gear made during World War II. This time we will talk about amplifiers made one generation back – in the 1950's and later.

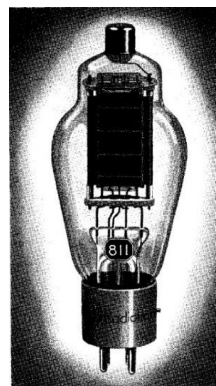
By the time we reached into the 1950's the early models using the original 811 tube had yielded to the more modern 811A version with its added plate dissipation.

One of the earliest amplifiers in this time category was the Hallicrafters HT-31. This amplifier, using two of the 811A tubes provided a In the late 1930's, Radio Corporation of America (RCA) announced a new RF was introduced in 1955 to be marketed with the first Hallicrafters SSB Transmitter and Receiver, the HT-33 and SX-100, respectively. Triode called the 811. That tube lives on today. We now know it as the 811A. This installment of Vintage Amateur Radio will discuss the 811, the 811A, and modern amplifiers using this vintage tube. This will be the first of three articles on this very popular tube. Products using the 811 or 811A were in ham radio products beginning in the early 1940's (first in WWII military equipment) and right into modern linear amplifiers available on the market, today. The original 811 and its successors over the years carry a reputation not unlike the other popular transmitting tubes over the years' such as the 6L6, 807, 1625, 2E26, and 6146 – just to name a few. While all these tubes are reasonably well known, the 811, and its 811A successor, have shown a much longer product life cycle with them being the only ones of this group still used in new equipment, today.

Pat Volkmann, W9JI, a good friend, fellow vintage radio collector, and fellow radio historian/restorer advises that he found the RCA 811 in a 1938 RCA Transmitting Tube Catalog. Assuming for the moment that was its time of introduction, that means it is now in its 81st year of production. A good run – and still going forward.



811 Line Drawing (1963)
RCA Technical Sheets



811 Sketch (1941)
Internet Photo



811A Photo (2019)
Internet Photo

The major difference in ham radio use of the 811 and the 811A tubes relates to Plate Dissipation. In Intermittent Commercial and Amateur Service (ICAS) these tubes are rated at 50 and 65 watts,

respectively – indicating a 30% increase in power capability for the 811A over the 811. Both are rated at a nominal 1,500 volts of Plate Voltage but technical sheets show examples of 1,250 and 1,750 volts, nominal on the plates. Examples of amplifiers in this series of articles will show the use of two, three, and four of these tubes used together. Good operation, within technical limits for dissipation and distortion products would see these tubes used in products providing linear amplifiers with outputs of 110 watts per tube with the 811 and 160 watts per tube with the 811A. A fine example of a good quality, properly rated 811A Linear Amplifier would be the four 811A tube equipped Collins 30L-1.¹ The 30L-1 has a rated output of 500 to 600 watts. That is well within the bounds of good operation of the 811A at 150 watts per tube SSB and CW RF output. Some modern amplifiers exceed these specifications – but at the penalty of shorter tube life and somewhat increased distortion.

While it is well known that the 811 and 811A could handle full specifications to 30 MHz, it may be less well known that both tubes can attain these ratings to 60 MHz. These tubes are good to 80 MHz at 80% of specifications and can hold to 60% of specifications at 100 MHz.

A relatively unknown trait of both the 811 and the 811A is their fast-heating filaments. The filaments could heat so fast that they could illuminate, heat up, and reach full operation in about three seconds. This made it possible to have the filaments off in a portable or mobile installation when in receive. Activating transmit with a microphone button (PTT switch for example) would also turn on the tube filaments. This would greatly reduce current consumption while just listening.²

In current times here are four amplifiers that use these tubes. Two of them are current, one has been off the market for a short while, and the last one several years but is of modern design. Three of them are, or were, made in the United States and one was manufactured in the United Kingdom. All four are from manufacturers still active in the ham radio business. We will start with two well-known amplifiers from Ameritron:



Ameritron AL-811 Linear Amplifier³
 Front View
 Interior view has front to the right



Ameritron AL-811H Linear Amplifier³
 Front View
 Interior view has front to the right



Ameritron AL-811 Linear Amplifier³
 Interior View
 Interior view has front to the right



Ameritron AL-811H Linear Amplifier³
 Interior View
 Interior view has front to the right

The self-contained Ameritron amplifiers are of good design with the AL-811H being one of the most popular amplifiers on sale to amateur radio operators in the current time⁴.

The AL-811 has three 811A tubes while the AL-811H has a complement of four 811A tubes in its amplifier. The interesting part of this amplifier is that the only difference in the two is the vacuum tube area of the chassis. All power components, control circuitry, meters, etc., are the same. The front panels are slightly different in that one says “AL-811” and one says “AL-811H.”

Ameritron rates these amplifiers rather aggressively. Check these specifications:

Ameritron AL-811 Linear Amplifier with 3x 811A Tubes

Mode	Power Output
SSB	600 Watts ⁵
CW	600 Watts ⁵
RTTY	400 Watts ⁶

Ameritron AL-811H Linear Amplifier with 4x 811A Tubes

Mode	Power Output
SSB	800 Watts ⁵
CW	800 Watts ⁵
RTTY	400 Watts ⁶

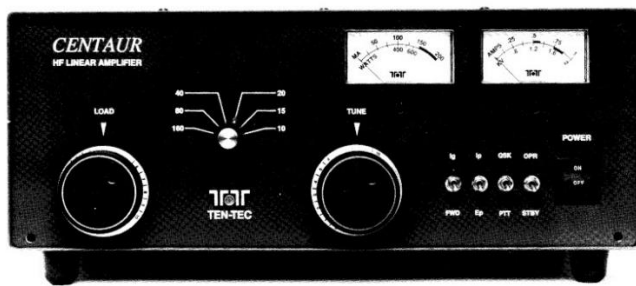
I am referencing the “aggressively” rated by virtue of printed specifications of the tubes which imply that the tubes should be expected to provide 160 watts output, per 811A tube in linear amplifier service on SSB and CW. With three 811A tubes one would expect an output power of perhaps 480 watts and with four tubes one would expect an output power of perhaps 640 watts. For my personal use I would follow those lower numbers using either of these amplifiers. That said, these amplifiers are known for clean and dependable operation so I will remain respectful of Ameritron’s specifications.⁷

Both the AL-811 and AL-811A Linear Amplifiers have a tuned input circuit providing a 50-ohm load to the exciter. These amplifiers require 80-100 watts of drive to get full rated power out. They operate from 160 through 10-meters, including the 17 and 12-meter bands (10 and 12-meter operation required an internal modification).

Both the AL-811 and the AL-811H are desktop units, as noted, with exterior dimensions of 8 x 13.75 x 16 inches (HWD) with both units 30 pounds, according to Ameritron literature.

Hinted above but not said, is that the two Ameritron amplifiers are more alike than different. Essentially all components are identical except that the mounting area for the tubes is different. The AL-811 has a three tube sub-chassis while the AL-811H has a four tube sub-chassis (AL-811H). In terms of weight, the AL-811H should be slightly heavier than the AL-811 model. I think the manuals are in error here – but I am not sure which is correct.

The other domestic manufacturer that made a recent vintage 811A Linear Amplifier was Ten-Tec. The product is not currently manufactured but is supported. It was known as the Ten-Tec Model 411 Centaur Linear Amplifier. It used three 811A final amplifier tubes in a circuit that functionally was like the Ameritron AL-811. Power ratings, however, were slightly different. Here is a picture of this attractive, self-contained amplifier:



**Ten-Tec Model 411
Centaur Linear Amplifier**

Specifications for the Centaur were as follows:

Ten-Tec 411 Centaur Linear Amplifier with 3x 811A Tubes

Mode	Power Output
SSB	500-600 Watts ⁵
CW	500-600 Watts ⁵
RTTY	350-400 Watts ⁶

Lower power levels shown are for operation on 160 and 10 meters. The Centaur had a tuned input circuit providing a 50-ohm load to the exciter. These amplifiers required 90-100 watts of drive to get full rated power out. They operated from 160 through 10-meters, including the 17- and 12-meter bands (10- and 12-meter operation required an internal modification). The Centaur is 6 x 15.5 x 13 inches and weighs 40 pounds.

I do not have access to a good quality internal picture of the Centaur but unlike the Ameritron AL-811 and AL-811H Linear Amplifiers, the Ten-Tec horizontally mounts the tubes to get a more-low profile look to the cabinet. This horizontal mounting requires an 811A tube that is specially made for this service. It is worth remembering that only certain 811A tubes in today's market can be mounted horizontally. Improperly supported grid structure in some tubes allows them to sag when warm and then touch the plate structure. That causes a catastrophic internal tube failure. RCA, GE, and Cetron tubes from the USA were made for vertical or horizontal mounting. Svetlana tubes from the Russian Republic were also able to handle mounting in either orientation. However, some Chinese tubes are not constructed for horizontal installation. Be sure you check with the North American distributor on this point before buying replacement tubes.

There is another current vintage 811A amplifier that is rarely seen in North America. Linear Amp UK manufactured a modern 811A Linear Amplifier until very recently.



Linear Amp UK Ranger 811H Front



Linear Amp UK Ranger 811H Interior

The Ranger 811H is similar in specifications to the Ameritron AL-811H but front panel and interior layout is different. The completely self-contained design includes a toroidal power transformer that is just visible under the capacitor and diode board in the interior view of the amplifier. The product, unlike USA products, comes ready to operate on all bands, including the WARC bands, from 160 to 10 meters. (European amplifiers not destined for USA sales do not have to inhibit operation on 10 meters.)

Linear Amp UK Ranger 811H Linear Amplifier with 4x 811A Tubes

Mode	Power Output
SSB	800 Watts ⁵
CW	800 Watts ⁵
RTTY	400 Watts ⁶

The Ranger 811H has a tuned input circuit that provides a 50-ohm load to the exciter. This is essential with today's solid-state transmitters. The amplifier is 9.5 x 14 x 16 inches (HWD) and weighs in at about 55 pounds.

If weight is any factor in linear amplifier performance then the Ranger 811H at 55 pounds would seem to possess much more power supply iron and therefore more inherent power capability. However, this could be tied to transformer core material and material used in chassis construction. This is all part of further analysis not complete as this is writing.

In the next installment of this series, we get more into the vintage era with amplifiers many readers will recognize, many may still use, but have not been in production for many years.

I appreciate that you read my articles. Remember that I am open to questions and comments anytime at my email address, W9MXQ@TWC.com.

A special note of thanks to my proofreader, Bob Bailey, W9DYQ. Bob is a bit more than a proofreader as he often adds commentary that makes it into the article.

Credits and Comments:

¹ Subject of a future article.

² I have given the reader a little review of ham radio use of these tubes. Further analysis may be had by reviewing applicable vacuum data sheets as available online.

³ These pictures are from Ameritron literature on the respective amplifiers shown.

⁴ "Best Selling Amplifier" quote is from a video on the manufacturing process for the AL-811A amplifier produced by Ameritron. So, this statement is Ameritron's opinion which may well be based on some market measurement process. I have no reason to doubt Ameritron's claims.

⁵ Typical SSB and CW Operation. (CW at 50% duty cycle.)

⁶ Typical RTTY or Data Operation – at approximately 50% duty cycle.

⁷ In fact, Collins Radio Company in their very popular and great performing 30L-1 Linear Amplifier¹ were held to the lower power levels shown on 811A specifications and netted many years of dependable operation. In act I have one such 30L-1 amplifier that is over 60 years old and is still running on its four original 811A final amplifier tubes.

©W9MXQ



GARS Membership

New Members List in November

Jonathan Baldwin (N4BRJ)
Jacob Ernst (KQ4ECM)
Kevin Jenkins (KQ4ERM)
Stephen Orey (KQ4ECK)
Laura Orey
Isaac Orey (KO4ZAO)
Eloise Orey

New Members: 7

**Total Members as of
December 1, 2022
356**

Join GARS members for our weekly
breakfast gathering at
7:30 AM most Saturdays
Now at
Cracker Barrel Restaurant
75 Celebration Dr.
Suwanee, GA 30024

Birthdays in December

David Adcock (KA4KKF)	Jeff Pere (KN4NQQ)
Richard Atkin (KJ4ZTY)	Jack Perry (K6JLP)
Steve Back (WB2OGY)	Ralph Pickwick (KJ4CNC)
Joe Biddle (AD4PZ)	Zachary Pratt (KO4NZB)
Kelian Carreras	Eric Rice (KO4OVZ)
Jackson Chauvin (KN4WBJ)	Grace Roberts
Jonathan Dickenson	John Roeder (KK6UNS)
(KE7PQL)	Jere Sandidge (K4FUM)
Paul England (KA4PQL)	Norman Schklar
Barry Greene (KM4RVY)	(WA4ZXV)
Franklin Haynes (KV4SP)	Dave Slotter (W3DJS)
Adrienne Holcomb (W4FHL)	Susan Swiderski (AF4FO)
Lin Holcomb (NI4Y)	Tyler Wall (KO4UUT)
Tyler Jensen (WB4TLJ)	Walter Wharton (KM4OND)
David Johnston (KM4UVI)	Amy Woodrick (KE4IKF)
Margier Langston	
Karen Lappen	
John Longo (W5BMW)	
Mitch Matteau (N0DIM)	
Chuck McCord (KK4TKJ)	
Pam Meridy (WB1AKQ)	
Alan Murray (WH7Q)	
Isaac Orey (KO4ZAO)	
Eloise Orey	
Hiroko Ortiz (KO4JWM)	

GARS MEMBERSHIP

Your current GARS membership status is shown in the monthly newsletter e-mail towards the bottom of the message. To become a GARS member, or to renew your GARS membership, please visit our website – <http://www.gars.org>. To make changes to your GARS membership (moved, new e-mail address, new phone number, etc.), please contact the Membership Chair at Email (<https://gars.org/contact/>) with any changes to your Membership information.

Membership Chair: Karen Albritton, KI4HPP

Committee Members: Dave Bruse, W4DTR

ARRL MEMBERSHIP

To update your ARRL membership information, please visit their website - <http://www.arrl.org>.

MAINTAIN YOUR LICENSE

You can update your Amateur Radio license information with the FCC at their website for free - <https://www.fcc.gov/wireless/universal-licensing-system>. License renewal is subject to the \$35 FCC fee.



Donating to GARS

Your GARS donation can be used for a certain purpose by donating to one of these funds:

- GARS SK Memorial Fund for Education
- (to remember and honor Silent Keys);
- GARS Scholarship Fund (Administered by the ARRL for awarding scholarships);
- GARS General Fund (any club purpose).

GARS has joined these rewards programs (a portion of every purchase you make through these merchants may be donated to GARS):

- Amazon Smiles;
- Kroger Community Rewards program.

For more information on how to sign up for these rewards programs, or to donate to GARS, visit

<http://gars.org/gars/donations-to-the-club>

GARS on Social Media



Discord Request:

<http://gars.org/discord>



Groups.io:

<http://gars.org/groups.io>



Visit GARS on Facebook:

<http://gars.org/facebook>



Follow GARS on Twitter:

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<http://gars.org/youtube>

GARS Mail Address:

GARS
P.O. Box 492531
Lawrenceville, GA 30049

Officers



Joe Biddle, President AD4PZ



Jamie Burns, Vice President KX4HA



Bill Hawkins, Secretary WR1TR



Pam Meridy, Treasurer WB1AKQ



Kevin Scott, Program Manager K4GTR

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Dave Bruse, VE Team Leader W4DTR



David Adcock, Webmaster, Field Day Chair, TechFest Chair KA4KKF



Ralph Pickwick, Education Chair KJ4CNC



Earl Whatley, Apparel Manager AF4FG



Bob Hoffmann, GARzette Editor K4CQO



Eddie Foust, Repeater Chair WD4JEM



Mike Weathers, WAS / DXCC QSL Card Checker and Historian ND4V



Chuck McCord, Net Manager KK4TKJ



Steve Back, Technical / RFI Advisor WB2OGY



Dallas Mellichamp, Workshop Leader N4DDM



Don Stewart, Elmer Manager KW4AL



Sandy Jackson, Health and Wellbeing KJ4DRO

Open Winter Field Day Chair
Open Georgia QSO Chair
Open Multimedia Chair

Directors and Trustees



John Davis, WB4QDX



Rick Cobb, N4XYY



Kyle Albritton, W4KDA



Bill Cherepy, WB4WTN W4GR Trustee



GARS Meeting Minutes

GARS – MEETING MINUTES 11/8/2022

There were 29 in-person attendees in addition to 9 online participants.

President Joe Biddle (AD4PZ) opened the meeting at 7:00 p.m. and closed the meeting at approximately 8:30 p.m.

New hams and visitors: Joe (AD4PZ)

- First time visitors recognized.
- New hams and upgrades recognized

Treasurer Report: Joe (Ad4PZ)

Apparel: Earl (AF4FG) has orders ready to pick up.

ARES: Jamie (KX4HA)

- ARES meetings are held the 4th Tuesday of each month at the Gwinnett County EOC on High Hope Rd.
- This month's presentation will be on ARDEN.
- The annual SET training exercise will be held Saturday Nov 19. Details will be on the ARES web site. It will be a simulated weather event.

Programs: Kevin (K4GTR)

- November – Radio astronomy Tom (KT4XN) will have an active demonstration.
- December – GARS Holiday Party
- January – Kevin will present on everything below the AM broadcast band.
- February – PiStar DMR hotspots.
- March – Ribbit – digital text mode for UHF/VHF
- Check the web site for all scheduled programs.

Workshop: Dallas (N4DDM)

- Workshops mirror the monthly program.

Techfest: David (KA4KKF)

- Jan 14 at the Gwinnett Fairgrounds in the main building.
- Volunteers for setup and teardown are needed. Check GARS.org or Techfest.info.
- Great prizes for the raffle.
- Eight forums.
- Demonstrations and exhibits from multiple clubs. If you have something to demonstrate, sign up

Repeater: David (KA4KKF)

- Monday night's repeater problems are unknown.
- Reset and working fine now.
- The repaired repeater will be returned to the Snellville location sometime around Christmas.
- We should also be able to set up the Fusion repeater as well.
- Ray (N4GYN) asked if there is a diagram or map of the repeater locations. David answered that he has

it diagramed on Google maps and will put it up on the web page.

- Fisher asked for an update on 6 meter and/or DMR. Per David, we do not have a DMR repeater. 6 Meter will go in as soon as we can get a work party to put the antenna back up.
- An online questioner asked if there is a precise date for the repeater move. Per David, "No."

Other: Joe (AD4PZ)

- November 12 is the HamJam in Alpharetta.
- JOTA was October 15. Steve (WB4OGY) thanked everyone that assisted. We had an enthusiastic 15 scouts that took the Amateur Radio merit badge class.
- The Hamfest went well. Several GARS members commented on how easy it is to get rid of old gear by renting a table in the flea market.
- Steve (WB4OGY) commented on the successful exam sessions at Hamfest and reminded all that there is an exam this coming Sunday at 2:00 at the hangar.
- Joe asked for comments on the recent HamCram. Jamie (KX4HA) announced that all 10 applicants that participated in the HamCram Halloween weekend passed the exam. The HamCram was presented by Ralph (KJ4CNC), Jamie (KX4HA), and John (WB4QDX).
- The holiday party is December 3rd. Geri Foust is coordinating the party. Help is needed serving. Go to GARS.org for tickets to the party. You do not have to eat to come to the party. The party will start at 6:00. We will eat at 6:30. Setup begins around 5:00 and volunteers are still needed for setup.

Program: Radio astronomy with Tom (KT4XN)

Minutes prepared by club secretary Bill Hawkins (WR1TR).

Workshop Minutes - November 15th, 2022

Number in Attendance: 14

Workshop Topic: Tom Crowley KT4XN Radio Astronomy for Hams

Presenter: Tom Crowley KT4XN

Brief Summary: Tom brought in a few radio astronomy items and talked about them. Others brought in some of their projects to talk about or get advice on, such as how to program their radios and installation tips on mounting them in their vehicle.



Events – GARS and others

ARRL CONTESTING INFO

From ARRL Contest Calendar

> For more information click the links <

2022	2023	January
1	1	Straight Key Night
1	7	Kid's Day
8-9	7-8	RTTY Roundup
15-17	21-23	January VHF Contest
February		
14-18	13-17	School Club Roundup
19-20	18-19	International DX – CW
March		
5-6	4-5	DX Contest -- SSB
April		
10	16	Rookie Roundup – Phone
May		
No planned contests		
June		
4-5	3-4	International Digital Contest
11-13	10-12	June VHF
18	17	Kid's Day
15-26	24-25	Field Day
July		
9-10	8-9	IARU HF World Championship
August		
6-7	5-6	222 MHz and Up Distance Contest
21-22	19-20	10 GHz & Up – Round 1
21	20	Rookie Roundup – RTTY
September		
10-12	9-11	September VHF
17-18	16-17	EME - 2.3 GHz & Up – Round 2
17-18	TBA	10 GHz & Up – Wknd 1
October		
15-16	TBA	EME - 50 to 1296 MHz – Wknd 2
17-21	16-20	School Club Roundup
November		
5-7	4-6	Nov. Sweepstakes - CW
12-13	TBA	EME - 50 to 1296 MHz
19-21	18-20	Nov. Sweepstakes - Phone
December		
2-4	1-3	160 Meter
10-11	9-10	10 Meter
18	17	Rookie Roundup–CW

For more information:

<http://www.arrl.org/contest-calendar>

HAMFEST CALENDAR

[Please confirm the status of a Hamfest before making plans to attend]

12/09/2022 - 12/10/2022

Tampa Bay Hamfest - ARRL West Central Florida Section Convention

Location: Plant City, FL

Type: ARRL Convention

Sponsor: Florida Gulf Coast Amateur Radio Council

Website: <https://fgcarc.org/>

01/07/2023 - BCARC Annual Freezefest

Location: Locust Fork, AL

Type: ARRL Hamfest

Sponsor: Blount County Amateur Radio Club

Website: <http://w4blt.org>

01/14/2023 - Don't Freeze Your Ham Off

Location: Defuniak Springs, FL

Type: ARRL Hamfest

Sponsor: Walton County Amateur Club

01/14/2023 - K4KDI Winter Tailgate 2023

Location: Orlando, FL

Type: ARRL Hamfest

Sponsor: Conway Baptist Church

Website: <http://k4kdi.square.site>

01/14/2023 - TarcFest

Location: Tampa, FL

Type: ARRL Hamfest

Sponsor: Tampa Amateur Radio Club

Website: www.hamclub.org

01/14/2023 - TechFest

Location: Lawrenceville, GA

Type: ARRL Hamfest

Sponsor: Gwinnett Amateur Radio Society

Website: <http://www.techfest.info/>

01/20/2023 - 01/21/2023 SW Florida Region Hamfest, ARRL So. Florida Sect.

Location: Fort Myers, FL

Type: ARRL Convention

Sponsor: Fort Myers Amateur Radio Club, Inc.

Website: <https://swflhamfest.info>

01/28/2023 - DeSoto County Hamfest

Location: Arcadia, FL

Type: ARRL Hamfest

Sponsor: DeSoto Amateur Radio Club, Inc.

Website: <http://desotoarc.org>

02/10/2023 - 02/12/2023 Orlando HamCation, ARRL SW Division Convention

Location: Orlando, FL

Type: ARRL Convention

Sponsor: Orlando Amateur Radio Club

Website: <http://www.hamcation.com>

For more information: <http://www.arrl.org/hamfests-and-conventions-calendar>

When searching by division, remember some states adjacent to GA are in different divisions:

Southeastern: GA, AL, FL Delta: TN Roanoke: NC, SC



GARS Events Calendar for 2022		GARS Recurring Calendar
TechFest Winter Field Day Spring Technician HamCram Dog Show Fundraiser Georgia QSO Party North metro area Fox Hunt Memorial Day Parade ARC/KARC Hamfest Field Day Summer General HamCram JOTA Fall Technician HamCram Maker Faire Stone Mt. Hamfest Holiday Party	Cancelled for 2022 Jan 29-30 2022 March 26-27, 2022 March 30-April 3 2022 April 9-10 2022 April 2022 May 30 2022 June 4 2022 June 26-27 2022 July 30-31 2022 October 16-17 2022 October 29-30 2022 TBD November 5-6 2022 December 3 2022	<ul style="list-style-type: none"> 2nd Tuesday of the month at 7 pm (except December) Monthly Club Meeting 690 Airport Rd, Lawrenceville, GA 30046 3rd Tuesday of the month at 7 pm (except December) Monthly Workshop 690 Airport Rd, Lawrenceville, GA 30046 2nd Sunday of the Month at 2 pm GARS Ham Exam Session 690 Airport Rd Lawrenceville, GA 30046 Every Monday at 7:30 pm: GARS Want, Swap, Sell, and Information Net on the GARS 147.075 MHz repeater Every Monday at 8:30 pm: ARES Training on the GARS 147.075 MHz repeater Most Saturdays at 7:30 am GARS Weekly Breakfast Cracker Barrel Restaurant 75 Celebration Dr., Suwanee, GA 30024

GARS CALENDAR FOR December 2022

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
				1	2	3 7:30 AM Breakfast at Cracker Barrel in Suwanee
4	5 7:30 – 8:00 PM GARS 2M Net	6 7:00 PM GARS Exec Meeting EAA 690 Hangar	7	8	9	10 7:30 AM Breakfast at Cracker Barrel in Suwanee
11 2:00 PM GARS VE Exam Session EAA 690 Hangar	12 7:30 – 8:00 PM GARS 2M Net	13	14	15	16	17 7:30 AM Breakfast at Cracker Barrel in Suwanee
18	19 7:30 – 8:00 PM GARS 2M Net	20	21	22	23	24 7:30 AM Breakfast at Cracker Barrel in Suwanee
25	26 7:30 – 8:00 PM GARS 2M Net	27	28	29	30	31 7:30 AM Breakfast at Cracker Barrel in Suwanee



Local Ham Radio Exams & Meetings

GARS Ham Radio Exams

Second Sunday of the month

Doors open at 1:45pm, exams start promptly by 2:00pm

GARS VE-Team

VEC: W5YI-VEC

EAA 690 Hangar

690 Airport Rd

Lawrenceville, GA 30046

GARS VE Team Leaders

E-mail: exams@gars.org.

November 2022 Results

We had a great exam session in November.

5 new Technicians

1 upgraded to General

Special thanks to the Volunteer Examiners who made this exam session possible:

W4DTR - Dave (CVE)

KK4TKJ - Chuck (Co-CVE)

WB4WTN - Bill

AF4FG - Earl

K4CQO - Bob

KM4FMW - Donna

KM4SWL - Richard

NV4Q - Bill

WR1TR – Bill

Thanks & 73,

Dave Bruse, W4DTR (CVE)

GARS VE Team Leader

E-mail: exams@gars.org.

Local Ham Radio Exams

In order to find an exam session near you, please visit

http://www.arrl.org/exam_sessions/. Contact the information in the listing for further information.



Local Ham Radio Meetings

In order to find a local Ham Radio Club meeting near you, please visit

<http://www.arrl.org/find-a-club>. Contact the club for meeting information.





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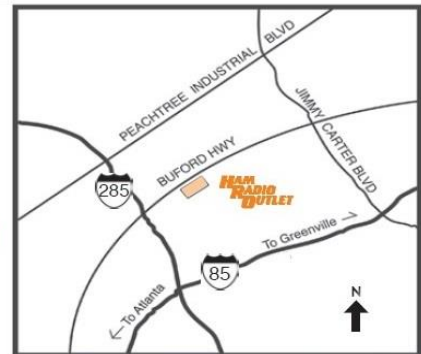
If your closest 800 number is busy, please call one of our other numbers.

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Manager:

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Assistant Mgr:

James KK4WNN

David AI4XL

Denise

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TechFest

Gwinnett Amateur Radio Society

TECH FEST 2023

★ ★ ★ **25TH ANNIVERSARY** ★ ★ ★

SATURDAY, JANUARY 14, 2023

EXHIBITORS: SET UP 7:30AM - 9:00AM

PUBLIC: 9:00AM - 3:00PM

FREE HAM EXAMS: 9:00AM - 11:00AM

FINAL PRIZE DRAWING: 3:00PM

FORUMS - EXHIBITORS

RAFFLE PRIZES - DOOR PRIZES

FREE LUNCH - FREE COFFEE

CHILI COOK-OFF - & MORE!



WWW.TECHFEST.INFO

GWINNETT COUNTY FAIRGROUNDS

EXPO CENTER BUILDING

2405 SUGARLOAF PKWY

LAWRENCEVILLE, GA 30045